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Code Ident  
10001

WS 7122

BUREAU OF NAVAL WEAPONS  
DEPARTMENT OF THE NAVY

PURCHASE DESCRIPTION  
LEAD, EXPLOSIVE

Approved: 31 May 67

*John S. Holder*

By direction

RECORD OF REVISIONS		
Revision Letter	Date	Changes

This document consists of pages 1 to 11  
and 1 to 11 inclusive.

FSC 1336

Code Ident  
10001

WS 7122

BUREAU OF NAVAL WEAPONS  
DEPARTMENT OF THE NAVY

PURCHASE DESCRIPTION  
LEAD, EXPLOSIVE

1. SCOPE.

1.1 Scope. This purchase description covers one type of explosive lead, referred to herein as the lead. The lead is loaded with RDX composition CH-6. ( ) ↙

2. APPLICABLE DOCUMENTS.

2.1 The following documents of the issue in effect on the date of invitation for bid or request for proposal, form a part of this document to the extent specified herein.

SPECIFICATIONS

Military

MIL-R-21723

RDX Composition CH-6.

STANDARDS

Military

MIL-STD-105

Sampling Procedures and Tables  
For Inspection by Attributes.

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MIL-STD-129

Marking for Shipment and  
Storage.

MIL-STD-331

Fuze and Fuze Components, En-  
vironmental and Performance  
Tests for.

MIL-STD-414

Sampling Procedures and Tables  
For Inspection by Variables  
For Percent Defective.

**DRAWINGS**

Bureau of Naval Weapons  
(Code Ident 19001)

1552600

Lead, Explosive

(Copies of specifications, standards, drawings and other publications required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

2.2 Other publications. The following document forms a part of this document to the extent specified herein. Unless otherwise indicated, the issue in effect on date of invitation for bid or request for proposal shall apply.

**Code of Federal Regulations**

49 CFR 71-76

Interstate Commerce Commission  
Rules and Regulations for the  
Transportation of Explosives  
and Other Dangerous Articles.

(Application for copies should be addressed to the Superintendent of Documents, Government Printing Office, Washington, D.C., 20360.)

### 3. REQUIREMENTS

3.1 Preproduction sample. When specified in the contract or purchase order, a preproduction sample consisting of 200 leads randomly selected from a preproduction lot of at least 1000 leads shall be delivered to the testing activity designated in the contract or purchase order, for preproduction testing (see 4.3 and 6.2). The preproduction lot shall be manufactured using methods proposed for production. Any production prior to approval of the preproduction sample will be at the risk of the supplier.

3.2 Conformance with documents. The lead shall conform to Drawing 1567600, the requirements specified herein and to the applicable requirements of documents listed in section 2.

3.3 Explosive material. RDX composition CH-6 shall conform to the requirements of MIL-R-21725.

3.3.1 Moisture content. At the time of loading, the moisture content of the RDX composition CH-6 shall not exceed 0.20 percent by weight when tested in accordance with 4.6.1.

3.4 Functional. The lead shall produce a 0.074 inch or deeper indentation in the steel test block when tested in accordance with 4.6.3.

3.5 Workmanship. The lead shall be a uniform product free from explosive material on all external surfaces. It shall be uniform in quality, free from splits, tears, and cracks; constructed and finished in a manner that will assure compliance with the requirements of this document and all referenced documents.

### 4. QUALITY ASSURANCE PROVISIONS.

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified, the

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supplier may utilize his own facilities or any commercial laboratory acceptable to the Government. The Government reserves the right to perform any of the inspections set forth in this document where such inspections are deemed necessary to assure that supplies and services conform to prescribed requirements.

4.1.1 Certified test data. All data which may be required (see 6.2) as a result of the inspection tests specified herein shall be certified test data (see 6.3.2).

4.2 Classification of tests. The inspection and testing of the leads shall be classified as follows:

(a) Preproduction tests (where applicable).

(b) Quality conformance tests (acceptance).

4.3 Preproduction tests. A preproduction sample, selected in accordance with 3.1, shall be subjected to the tests of Table I in the sequence shown. Defective leads, in excess of those allowed by Table I, shall be cause for rejection of the preproduction sample.

Table I. Preproduction Tests

Examination or test	Requirement paragraph	Test paragraph	Defectives allowed
Moisture content	3.3.1	4.6.1	0
Workmanship	3.5	4.6.2	0
Functional	3.4	4.6.3	*

\*In accordance with 4.3.1.2.

4.3.1 Acceptance criteria.

4.3.1.1 Moisture content and workmanship. Failure of the preproduction sample to meet the requirements of 3.3.1 and 3.5 shall be cause for rejection of the preproduction sample.



4.3.1.2 Functional. Functional test acceptance criteria shall be based on MIL-STD-414, Single Specification Limit, Variability Unknown, Standard Deviation Method, Acceptable Quality Level (AQL) of 0.25 percent, lower limit as specified in 3.4.

4.4 Quality conformance tests. Quality conformance tests for the leads shall consist of the tests and requirements of Table II in the sequence shown.

4.4.1 Lot. An inspection lot shall consist of a group of leads from the same production line(s) offered for delivery at one time and from which a sample is drawn and tested to determine compliance with the acceptability criteria. The sample taken from a composite inspection lot shall be representative of the numerical ratios of the production lots making up the inspection lot.

4.4.1.1 Lot size. The lot size is the number of leads in a lot. The lot size shall be used to determine the sample size required when sampling is done in accordance with MIL-STD-414 or MIL-STD-105, as applicable.

4.4.2 Sampling procedures and acceptance criteria.

4.4.2.1 Moisture content. Sampling for moisture content shall be conducted at the loading activity in accordance with 4.6.1. No defectives shall be allowed. Any lead loaded with a charge that does not meet the requirements of 3.3.1 shall be rejected.

4.4.2.2 Workmanship. Unless otherwise specified in the contract or purchase order, all required sampling for workmanship examination shall be done in accordance with MIL-STD-105, Inspection Level II, AQL of 1.0 percent maximum.

4.4.2.3 Functional. Unless otherwise specified in the contract or purchase order, all required sampling for functional testing shall be done in accordance with MIL-STD-414, Inspection Level V. Lot acceptance shall be based on MIL-STD-414, Single Specification Limit, Variability Unknown, Standard Deviation Method, AQL of 0.25 percent, lower limit as specified in 3.4.

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Table II. Quality Conformance Tests

Examination or test	Requirement paragraph	Test paragraph	Sampling paragraph
Moisture content	3.3.1	4.6.1	4.4.2.1
Workmanship	3.5	4.6.2	4.4.2.2
Functional	3.4	4.6.3	4.4.2.3

4.4.3 Test data. When so specified in the contract or purchase order (see 6.2), the supplier shall submit with each lot of leads, certified test data (see 4.1.1) of any required tests performed on all units tested in accordance with Table II.

4.5 Test conditions. Unless otherwise specified herein, all tests and inspections shall be performed at room ambient temperature (65 to 90 degrees Fahrenheit) and ambient humidity (95 percent maximum).

4.6 Test procedure.

4.6.1 Moisture test. Prior to consolidating the CH-6 charge in the lead, a 10-gram sample of the CH-6 shall be collected in a tared stoppered container at the site of and during the day's production. The moisture content shall then be determined in accordance with MIL-R-21723. Weighing accuracy shall be within 0.5 milligrams. The sample shall meet the requirements of 3.3.1.

4.6.1.1 Moisture test frequency. At least one moisture test shall be conducted at the loading activity on each day of production or on each lot, whichever requires the more frequent testing, plus any additional tests as the inspector considers warranted by variations in humidity, manufacturing process, or materials.

4.6.2 Visual examination. The leads shall be visually inspected to verify that they meet the requirements of 3.5.

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4.6.3 Functional test. The functional test shall be performed in accordance with MIL-STD-331, Test 301. The sample shall meet the requirements of 3.4.

4.7 Packaging, packing, and marking. Visual examination shall be made of the packaging, packing, and marking to ascertain that the requirements of section 5 have been met.

## 5. PREPARATION FOR DELIVERY:

### 5.1 Preservation and packaging (see 3.2).

5.1.1 Level A. Unless otherwise specified, packaging shall be in accordance with the Code of Federal Regulations 49 CFR 71-78.

5.1.2 Level B. Not applicable.

5.1.3 Level C. Not applicable.

### 5.2 Packing (see 3.2).

5.2.1 Level A. Unless otherwise specified, packing shall be in accordance with Code of Federal Regulations 49 CFR 71-78.

5.2.2 Level B. Not applicable.

5.2.3 Level C. Not applicable.

5.3 Marking. In addition to any special marking required by the contract or purchase order, all marking shall be in accordance with MIL-STD-129 and Code of Federal Regulations 49 CFR 71-78.

## 6. NOTES.

6.1 Intended use. The explosive lead is intended for use in an explosive train.

6.2 Ordering data. Procurement documents should specify the following:

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- (a) Title, number, and date of this document.
- (b) Preproduction sample size, if required and if other than 3.1.
- (c) Name and location of activity designated to receive preproduction sample.
- (d) Level of packaging and packing required, if other than as specified in section 5.
- (e) Special marking required.
- (f) Certified acceptance test data on moisture test (see 4.4.3 and 4.5.1) to accompany each lot.

### 6.3 Definitions.

6.3.1 For definition of preservation, packaging, and packing levels, see FED-STD-102.

6.3.2 Certified test data. Certified test data is defined as being documented test data bearing the signature of an authorized representative of the manufacturer, and the signature of the Government Representative.

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**6.4 General safety precautions.** The loading, assembly and handling of the explosive items covered by this publication, and the subassemblies thereof, involve hazardous operations and therefore require suitable safety precautions. Use of this publication will not be construed as to relieve the supplier or manufacturer of responsibility for the safety of his operations. Listed below are certain minimum provisions which a supplier or manufacturer (which explosively loads the item covered) should observe in order to fulfill his responsibility for safety. At all applicable Government plants, these provisions are mandatory. Such other warnings and precautions, pertinent to the operational effectiveness or safety during use or loading of the specific items are included in the detail technical requirements of this publication.

**6.4.1** All loading operations should be conducted in a neat and orderly manner.

**6.4.2** Safe equipment and methods should be utilized for transporting and handling explosives and loaded parts. When performing operations, such as mixing, pouring, weighing, charging, sifting, drying, pressing, casting, crimping, etc., remote control, barricaded handling equipment shall be used.

**6.4.3** Personnel handling detonators, primers, delay elements, lead-ins, boosters, and related parts which affect functioning, should avoid using bare fingers or improper equipment in order to prevent damage, corrosion, or deterioration from perspiration or other contaminating deposits.

**6.4.4** In order to minimize the absorption of moisture from the atmosphere or other sources during loading and handling operations, the exposure of explosive materials shall be closely controlled.

**6.4.5** All explosives and completely or partially loaded items, should be stored in suitable storage magazines located in accordance with the American Table of Distances (ATD) or other applicable safety standards. While in process these items shall be located in accordance with intraplant distances and stored in adequate ready or service magazines if outside of loading rooms. For all Government managed explosives loading plants, the provisions of the Armed Services Explosives Safety Board covering quantity-distance relations for explosives shall apply.

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6.4.6 Proper care must be exercised at all times to protect personnel, equipment and loading areas from accidents, fires or explosions. The precautionary measures in the following paragraphs should be observed.

6.4.6.1 Employ properly proportioned and properly located protective barricades, screens or shields at all required points.

6.4.6.2 Keep only minimum quantities of explosives and completed or partially loaded parts present at each stage of operation.

6.4.6.3 Keep explosives and explosive parts in approved covered receptacles. Ensure covers are in place after material is taken out of or put into the receptacles. Receptacles should be conductive to ground electrostatic charges.

6.4.6.4 Protect operations from electrostatic charges by effectively grounding all machinery, equipment, and fixtures. Employ suitable grounded conductive coverings for floors, work benches, tables, and workers' conductive shoes. Employ workers' clothing of a type to minimize the accumulation of static charges. Fabrics such as silk and nylon, which promote static generation should be avoided. Additional devices, such as grounded bracelets for workers, should be employed where operations are conducted with items unusually sensitive to initiation by static electricity. Such items include initiating explosives, tracer mixtures, and low-energy type electric primers, detonators and squibs. The latter types of items should have the free ends of lead wires bared and twisted together. They shall be packed in relatively small groups wrapped in bare non-insulated aluminum or other uncoated metal foil. During assembly and processing operations, such sensitive electric items should be short circuited by clips or other devices until installed with safety shunt in the final device. Additional precautions for these items should include mechanical shielding to contain or deflect fragments and blasts. Electrical shielding of these items from induced electric currents generated by sources such as lightning, static, radiations from communications apparatus, radar, or high frequency heat apparatus, etc., shall be utilized. For safety, humidity of work rooms should be appropriately increased, as required to lessen electrostatic effects without inducing excessive moisture absorption by any of the components.

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6.4.6.5 Protect all explosive operations from effects of electric current originating from equipment such as soldering irons, heaters, switches, wiring, motors, lights, test instruments, etc., by suitable insulation, grounding separation or shielding. Such electric sources may initiate explosives by heat, sparks, arcs, or due to completing an electric circuit through an electric primer, detonator, or squib. Circuits may be inadvertently completed, for example, from a defective electric soldering iron through a grounded contact. Removable short circuiting clips, or other devices shall be employed during manufacturing operations involving electric primers, detonators or squibs.

6.4.6.6 Enforce the wearing of suitable safety footwear, gloves, goggles, respirators and impregnated garments to protect personnel against burns, poisoning and associated industrial hazards.

6.4.6.7 Allow no fires or exposed electrical or other sparking equipment. Allow little or no flammable material to be present in loading, handling and storage spaces. Enforce proper "Match" and "No Smoking" rules.

6.4.6.8 Enforce good housekeeping and maintain effective policing inspection and supervisory methods throughout the loading area and surroundings. Employ effective cleaning methods periodically to minimize the accumulation of explosives, explosive dust, and other contaminants. Assure its removal from floors, walls, ceilings, ledges, tables, benches, piping, equipment and items being loaded. Clean up any spilled material immediately.

Custodian:  
NASC 52021E

Preparing Activity:  
NOTS/China Lake, California